incorporated glutamine (10 gm po TID starting with the administration of the preparative regimen) standardly for mucositis prophylaxis. Twenty-four patients received glutamine. Eleven patients were lost to follow up (6 no glutamine, 5 glutamine). The response rate to transplant in the no glutamine group was 43%, compared with 47% in the glutamine group. In the no glutamine group, 8/11 patients (73%) were progression free at a median follow-up of 19 months, compared with 15/19 (79%) in the glutamine group at a median follow-up of only 9 months. Interestingly, of the patients who relapsed, the median time to relapse was 17 months in the no glutamine group and only 6 months in the glutamine group. Our observation is that glutamine at this dose may be associated with early relapse and poorer progression-free survival (PFS) in MM patients treated with high-dose melphalan. These data support the *in vitro* examination of glutamine in tumor cell lines to discern if glutamine abrogates the cytotoxic effects of chemotherapy. Future prospective trials should scrutinize response rates, PFS, and overall survival in glutamine and non-glutamine treated patients especially if higher-doses are utilized.

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FLUDARABINE PRETREATMENT AND CD34+ YIELDS IN NON-HODGKINS LYMPHOMA STEM CELL PATIENTS

Paivanas, N.[1]; Beveridge, M.[1]; Lumadue, J.[2]; Sheridan, M.[2]; Torloni, S.[2]; Orloff, G.[1] 1. Fairfax Stem Cell Transplant Program INOVA Fairfax Hospital Cancer Center, Fairfax, VA; 2. INOVA Fairfax Hospital, Fairfax, VA.

Background: Previous chemotherapy, radiation and bone marrow infiltration by malignancy are predictors of poor stem cell yield in patients undergoing peripheral blood stem cell harvests for autologous stem cell transplantation (SCT). Prior treatment with Fludarabine is thought to adversely affect yields as well. We have examined our institution's data to determine whether this is an accurate observation. Methods: Apheresis records from patients with Non-Hodgkins Lymphoma (NHL) undergoing SCT were reviewed (N=43). The patient population included 35 patients who received non-fludarabine containing chemotherapy regimens; with 4 patients of the non-fludarabine population receiving radiation and chemotherapy. Eight (8) patients had received chemotherapy that included 3 to 6 cycles of FND (average 3.8). Patients were uniformly mobilized with 10mcg/kg/d of Granulocyte Colony Stimulating Factor (G-CSF). High volume (40L) apheresis was performed for 1-4 days with a collection goal of 5 X10^6 CD34/kg ideal body weight. Data were analyzed using non-parametric one-way analyses of variance. Results: Patients who had received previous chemotherapy with no fludarabine yielded a median of 5.8 X10^6 CD34 cells (n=31; range 2.7-11.6 X10^6). Patients who had previously received three to six cycles of FND were also able to meet the apheresis goal for collection, yielding a median of 5.0 X10^6 CD34 cells/kg (n=8; range 4-13.1 X10^6). Patients who had received prior non-fludarabine chemotherapy and radiation were not generally able to meet the apheresis target, and had the lowest median yield of CD34 cells, (3.1 X10^6 CD 34 cells/kg; n=4; range 0.9-5 X10^6). Conclusion: Pretreatment with 6 or fewer cycles of FND had no statistically significant adverse effect on the total yield of CD34 cells. Patients treated with FND did not require additional apheresis procedures, as compared to non-fludarabine regimen treated patients. As expected, increased cycles of prior chemotherapy, prior radiation, and increasing age were all associated with lower total CD34 yields and additional apheresis procedures in order to reach the target dose.

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THE ADMINISTRATIVE CHALLENGE IN THE DEVELOPMENT OF A POINT OF SERVICE CLINIC FOR POST BLOOD AND MARROW TRANSPLANTATION PATIENTS

Adornetto, D.L.; Stary, S.J.; Neumann, J.; Ippoliti, C.; Sorensen, S. BMT Center, UT MD Anderson, Houston, TX.

Todays health care climate and advancements in Blood and Marrow Transplantation have challenged the outpatient administrative staff to develop innovative strategies in caring for higher acuity patients. Autologus Transplantation patients are frequently discharged from the hospital immediately following chemotherapy for mobilization, or soon after engraftment. The challenge was to integrate this patient population into the outpatient clinic. These early discharges challenge the outpatient staff to provide quality care while meeting the needs of all patients. The rationale for the development of the Fast Track Clinic is to perform laboratory testing and patient evaluation by a bone marrow transplant nurse, APN, and clinical pharmacist in a familiar environment. Specifically identified treatment needs are performed in this clinical area while long-term fluid infusion, and blood product transfusion are transitioned to other clinical areas. The Administrative challenges in developing this clinical area, included space feasibility, room utilization, staff education/skills, equipment/supply issues, financial issues, and staff buy-in. Space feasibility was evaluated by a room utilization study indicating low usage in the morning hours. The staff educator provided intense training on pump usage, CVC care, and IV drug administration. Strategies were planned in collaborative multidisciplinary meetings with the administrative and clinical staff to provide a sense of ownership in developing this process. One advantage of the fast track clinic is that patients are followed by the same personnel from initial consultation throughout the transplant journey. Another impact of the implementation of the fast track clinic is the enhancement of the RNs technical, critical thinking, and problem solving skills. Patient satisfaction surveys and comment cards are obtained on a monthly basis, reviewed for possible improvements, and demonstrate a high level of satisfaction regarding care of the patient.

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SAFETY OF RITUXIMAB FOLLOWING AUTOLOGOUS STEM CELL TRANSPLANT

Calderon, N.[1]; John, V.S.[1]; Loscalzo, J.[1]; Bayer, R.[1] 1. Hematology/Oncology, North Shore University Hospital, Manhasset, NY; 2. North Shore University Hospital, Manhasset, NY; 3. North Shore University Hospital, Manhasset, NY.

The use of Rituximab for post-transplant immunomodulation has revealed promising effects. Published data demonstrates that administration of Rituximab following autologous peripheral stem cell transplant causes rapid depletion of CD20+ cells without increase in infection. Studies conducted in patients with follicular lymphoma and mantle cell lymphoma suggest that this approach is feasible and safe, and appears effective in eliminating minimal residual disease leading to high rates of durable remission. Common reported side effects associated with Rituximab administration include fever and chills, bronchospasm, angioedema, hypersensitivity reactions and tumor lysis syndrome. Transient cytopenias are usually not severe. Less common adverse events include hypogammaglobulinemia, cardiac arrythmias, grade 4 cytopenias, serum sickness and vasculitis. The infusion of the antibody during immune reconstitution after autograft may be associated with adverse events not commonly seen in the pre-transplant setting. We reviewed 7 patients who received Rituximab consolidation following APSCT and documented the incidence of cytopenias and any associated adverse events. Two patients had APSCT for transformed follicular lymphoma, four patients had diffuse large cell lymphoma and one had mantle cell lymphoma. Adverse events included prolonged thrombocytopenia and neutropenia and one patient developed acute congestive heart failure with diffuse myocardial hypokinesis and severe tricuspid regurgitation reversible after treatment with steroids and inotropes. Five patients are in complete remission with a median follow up of 45 weeks and two patients recurred shortly after completing Rituximab consolidation. The administration of Rituximab following APSCT may be associated with improved progression-free survival and appears to be feasible with careful observation. Based on this retrospective review we suspect that the administration of Rituximab in the post-transplant setting may be associated with uncommon and serious side effects such as acute heart failure and moderate to severe thrombocytopenia and neutropenia observed even after complete count recovery post-transplant.